

S.M.Rezaul Hoque

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Skills and accomplishments

- More than 3 years of professional work experience in System design and development
- Worked on design and development of P2P, VoIP, Multithreading and Socket Programming
- Good understanding of Object-Oriented principles and Software Engineering practices
- Experience with Design Patterns and Test Driven Development
- Skilled programming experience in Java and its associated technologies

Educational Qualification

MSc in Software Engineering of Distributed Systems

(SEDS), July 2009

The Royal Institute of Technology (KTH)

Stockholm, Sweden

www.kth.se

BSc in Computer Science, Dec 2005

North South University (NSU)

Dhaka, Bangladesh

www.northsouth.edu

Professional Experience

Research Engineer

Feb 2009 – Till date

Ericsson Research

Stockholm, Sweden

rezaul.hoque@ericsson.com

www.ericsson.com/se

Research Engineer (Internship)

Nov 2008 – Feb 2009

Philips Research Labs

Eindhoven, Netherlands

www.research.philips.com

Software Engineer

Dec 2005 – Sep 2007

ReliSource Technologies Ltd.

Dhaka, Bangladesh

www.relisource.com

Professional Projects

1. Smart Recovery

A backup system developed for Enterprise Content Management platform EMC Documentum.

My responsibilities were development and timely delivery of modules.

- Worked on modules which performed data backup and data recovery.
- Responsible for management of a sub team.

Technologies used: Java SE, JUnit, Documentum API, MS SQL Server, Oracle DB

2. Scalable Network Tomography Tool

It is a scalable tool to perform active network measurements.

My responsibility was to develop an algorithm which does probabilistic distributed scheduling to probe for measurements, ensuring that eventually the solution tends to a full mesh. I also did simulations to study the pros and cons of the proposed algorithm, and finally implement it as a complete tool to be deployed on the Internet.

Technologies used: Java SE, PeerSim (Event based simulator)

3. Centera Data Liberator

A tool to migrate the data contents of Centera System to Archivas System.

My primary responsibilities were designing the tool from scratch and implementation.

Technologies Used: Java SE, JUnit

4. **VfxEdit Tool**

It is an editor to fine tune values to generate effects used in games.

My responsibilities included development of the frame work for the project on top of which the project is built. And it also included the management of a sub team.

Technologies used: C++, wxWidget API, Poseidon, Sharepoint

5. **Streaming 3D**

It is a library to enable any off the shelf game to run on a server and be played on the client machine.

I was responsible for trying out optimizations methods, to increase the quality of the streaming over the intranet.

Technologies used: C++, OpenGL, X3D

Personal projects

1. **A p2p file sharing based on mobility**

A peer to peer file sharing system based on a mobility search. Each node releases agents which move around the network to different peers, where it wakes up and searches in the server for the file or meta-data it wants. Each peer has different set of mobility agents with different searching capabilities. The concept of mobile agents searching around the network is incorporated as the file discovery mechanism in this p2p file sharing implementation.

Technologies used: Java SE (UDP and TCP socket programming), Ethereal

2. **SIP Answering Machine**

SIP Stack implementation to support VoIP calls and Auto Answering.

Technologies used: Java SE (UDP and TCP socket programming), Ethereal, Free TTS, SIP protocol

3. **IP Packet Bouncer**

Sniffs raw packets from the wire and bounces it after changing the IP header similar to IP Sprayer.

Technologies used: Java SE, jpcap API

4. **Implementation of various Distributed algorithms**

- Group Membership Management
- Perfect failure detector (PFD)
- Eventually perfect failure detector (EPFD)
- Best Effort Broadcast (BEB)
- Regular Reliable Broadcast (RB)
- Uniform Reliable Broadcast(URB)
- Probabilistic Broadcast(UB)
- Read Impose Write Consult
- Read Impose Write Consult Majority
- Fail Stop Atomic Register
- Fail Silent Atomic Register
- Abort able Consensus
- Paxos Eventual Consensus
- Split Stream Content Distribution

Technologies used: SicsSim,TBN, Event based programming

Startup projects

1. **Lossless Image Compression**

A new lossless image compression technique was developed. The compression technique uses a data structure called Peano Tree (P-Tree). The original P-tree is enhanced to a newer data structure called the Peano Pattern Mask Tree. The Compression technique gives a compression ratio of 1.48 on average. Have three published papers on this new this technique of compression.

Technologies used: C++

2. **CrazyJokr** - A Web2.0 application for creating, publishing and sharing power point presentation.
A web tool which enables user to create and share presentations on the web. The tool has a custom format for saving presentations.
Technologies used: PHP, JavaScript, Ajax , HTML, XML, MySQL
3. **Quranic Verses** - A web2.0 social application for sharing verses of the Quran.
A social web tool which enables to display, share, discuss verses of the Quran in a new innovative way.
Technologies used: PHP, JavaScript, Ajax , HTML, MySQL
4. **Graph Wizard v0.9** - A graph plotting tool
It is a utility to generate graphs at all modes. It can plot graphs given any equation as input. It is a replica software to the one used in Graphing calculators.
Technologies used: C++

Published Papers

1. S.M.Rezaul Hoque, Shams Mahmood Imam, Mohammad Kabir Hossain, William Perrizo, "Algorithm for Shifting Images Stored in Peano Mask Trees", The 8th International Conference on Computer and Information Technology (ICCIT), Dhaka, December 28-30, 2005
2. Mohammad Kabir Hossain, Shams Mahmood Imam, S.M.Rezaul Hoque, "Transformations on Images Stored in Peano Mask Trees", The 9th IEEE International Multi Topic Conference (INMIC) National University of Computer and Emerging Sciences Karachi Campus, Pakistan, December 23-25, 2005
3. Shams Mahmood Imam, S.M.Rezaul Hoque, Mohammad Kabir Hossain, William Perrizo, "Improved Version of Lossless Image Compression using PPM-Tree" The 8th International Conference on Computer and Information Technology (ICCIT), Dhaka, December 28-30, 2005

Technologies used

- **Programming Languages:** JavaSE, C/C++, J2ME, J2EE, C#, Erlang
- **Java Technologies :** JAXB, JDBC, JPA, Java Security API, Java Mail API, RMI, CORBA, EJB, JNI, JNLP, Java Web start, Applets, Swing, AWT, SWT
- **ORM Technologies :** Java Persistent API (JPA), Hibernate
- **Servers :** GlassFish, Apache
- **Scripting Languages:** PHP, JavaScript, Active Perl, Python
- **Markup Languages:** HTML,XHTML, XML, X3D, SOAP, WSDL, JSP, WS-BPEL
- **Project Management tools:** Microsoft Sharepoint, GoPlan
- **Modeling & Documentation tools:** Poseidon, Rational Rose, Doxygen, Javadoc
- **Testing Tool:** Mercury Quality Center, FireBug
- **Version Control Tools:** CVS, Visual Source-Safe, PerForce
- **Bug Tracking Tools:** BugZilla, Mercury Quality Center

References

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